

# Rhodora

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## A CHANGE OF STATUS FOR TWO SPECIES OF CHRYSOPSIS

R. K. GODFREY

*CHRYSOPSIS GOSSYPINA* (Michx.) Nutt., forma **decumbens** (Chapm.), stat. nov. *C. decumbens* Chapm. Flora of the Southern United States, 2nd Ed. 217 (1883); *C. arenicola* Alexander in Small, Manual of the Southeastern Flora, 1339 (1933).

There appear to be no differences in the flowers or fruits as between *Chrysopsis gossypina* and *C. decumbens*. The only observable difference between them is in the character of the pubescence of the peduncles and the involucre. *C. gossypina* has the peduncles and involucre densely cottony-lanate, whereas in *C. decumbens* they are glandular-pubescent. In a series of specimens one of these extremes grades imperceptibly into the other; furthermore, there seems to be no geographic segregation of the extremes. Specimens from a single county in the sandhills of South Carolina, for example, exhibit all the degrees of difference with regard to this characteristic.

*Chrysopsis arenicola* is, in my judgment, identical with what has been passing as *C. decumbens*. Dr. W. B. Fox and I collected specimens of a decumbent, cottony-lanate *Chrysopsis* in southern Wake County, North Carolina, last autumn (sandy ridge, very near the Wake-Harnett County line on the road between Fuquay Springs and Duncan, *Godfrey & Fox* 48674, Oct. 16, 1948) which, using Small's Manual, I identified as *C. arenicola*. According to Small the species was known only from the sandhills near Hartsville, South Carolina. Subsequently, in determining the identity of other collections of similar appearing plants from elsewhere,



I came to question the existence of *C. arenicola* as an entity distinct from *C. decumbens*. *C. decumbens*, moreover, on the basis of the differences outlined above, did not seem to be sufficiently distinct from *C. gossypina* to be maintained in the specific or the geographic-varietal category.

As for the identity of *Chrysopsis arenicola*, it would seem as though it may have been born of some taxonomic shenanigans. Small's key to the species of *Chrysopsis* (not including the grass-leaved members which he segregates as *Pityopsis*) is so constructed as to key out named sub-groups within the genus. Ordinarily one expects a subdivision of a genus to include species which have certain natural affinities that distinguish them as a group from another group of species with natural relationships. It takes little discrimination, however, to discover that in this case the groupings are of such nature as to violate the principle. Some of the most obviously closely related species fall into different subdivisions. This device serves nicely in the descriptive sequence of the species to keep apart entities which are uncomfortably similar in their characteristics. Thus does *C. arenicola* occupy place number 7 in the sequence, whereas *C. decumbens* is number 11.

For purposes of comparison there is given below the original description of *C. decumbens* and that of *C. arenicola*:

This is Chapman's original description of *C. decumbens* which he had from St. Vincent's Island in W. Florida: "stems decumbent, simple, silky-villous; leaves villous, lanceolate-oblong, obtuse, entire, sessile, leafy in the axils; the lowest spatulate-oblong, clustered; heads large, in a loose corymbose panicle; the peduncles and involucre glandular-pubescent; rays about 25, showy; achenia hairy, furrowed; exterior pappus bristly."

Alexander's description of *C. arenicola* which he had from South Carolina is this: "stem about 3 dm. tall, white cottony: blades of the cauline leaves various, the lower ones slightly broadened upward, 1-3 cm. long, the upper ones oblong-lanceolate to linear-lanceolate, auricled at the base, sessile, all white cottony-lanate: bracts of the involucre rather rough-glandular, the inner bracts narrowly linear, acuminate: achenes about 2 mm. long."

In the same treatment in which Alexander's original description of *C. arenicola* appears (Small, 1933), with glandular peduncles and involucre, *C. decumbens* has lost the glandular character of its peduncles and involucre and its bracts have become sparingly cobwebby! And is it not remarkable that we should find

that *C. arenicola* is keyed to the *Marianae* on the basis of its glandular involucre, while *C. decumbens* is keyed to the *Pilosae* on the basis of an involucre with cobwebby hairs!!

I have before me a co-type of *C. decumbens* and the type of *C. arenicola*. They are a perfect match. In view of all of the above considerations, I am considering *C. gossypina* as including plants not only with cottony-lanate involucres and peduncles, but with forms grading to an extreme having glandular involucres and peduncles, the latter, for the sake of convenience and clarity, to be regarded as a *forma*. *C. arenicola* is relegated to synonymy.

NORTH CAROLINA STATE COLLEGE, Raleigh

## NEW MISSOURI PLANT-RECORDS (1946-1948)

JULIAN A. STEYERMARK

SINCE the last report on plants new to Missouri (RHODORA **43**: 658-663. 1941, and **44**: 248. 1942), continued intensive collecting in the state by Mr. Bill Bauer and the writer since the end of the last war has resulted in the discovery of a number of species new to the state. The following are all deposited in the Herbarium of the Chicago Natural History Museum.

BRACHIARIA EXTENSA Chase. This is an unexpected addition to the flora of Missouri. It was previously recorded by Hitchcock in his Manual of the Grasses of the United States, p. 572, from Florida, Louisiana, Texas, Oklahoma, and Cuba. The present collection, *Steyermark 67054*, is from openings along ditch, along road E, sect. 8,  $1\frac{1}{4}$  mi. east of Cooter, Pemiscot Co., October 23, 1948.

At first sight the plant has the appearance of a species of *Panicum* or *Paspalum*. In fact, on a collection by Elihu Hall (no. 814) in the Herbarium of the Chicago Natural History Museum, Engelmann noted "A paspaloid *Panicum* I cannot make out".

SCIRPUS ETUBERCULATUS (Steud.) Kuntze. Another unexpected discovery in Missouri, this species, hitherto supposed to be confined to the Coastal Plain from Delaware to Florida west to Louisiana, was found during the autumn of 1948 in one of the remarkable upland sink-hole ponds of southern Missouri. These ponds, nestling in the midst of a dry upland oak-hickory



forest, have apparently preserved a relic flora of by-gone coastal plain days when the Ozarks, preceding their last Tertiary uplifts, had been peneplained to a low swampy area. The nearest station for this species (Saratoga, Mississippi) is several hundred miles removed from that of the present collection, *Steyermark 66629*, Tupelo Gum Pond, T 25 N, R 4 W, sect. 4, 8 mi. west of New Liberty, Oregon Co., October 3, 1948. The culms are extensively creeping, have a gray-green or blue-green color, and, although rather sharply triangular above, are obtusely or obscurely triangular below.

*CAMASSIA SCILLOIDES* (Raf.) Cory, forma **variegata**, f. nov., a typo recedit foliorum marginibus luteo-albidis.—Northwest-facing slopes, Pedelo Creek, T 27 N, R 19 W, sect. 6, 4½ mi. northeast of Sparta, Christian Co., Missouri, April 25, 1941, *Julian A. Steyermark 28324*, TYPE, in Herb. Chi. Nat. Hist. Mus.

This form, with the leaves margined creamy-white, sometimes is found scattered within a colony of ordinary green-leaved wild hyacinth.

*TRILLIUM OZARKANUM* Palmer & Steyermark. Known previously in Missouri only from Barry County in the southwestern corner of the state, this species has been discovered in the southeastern part of the Ozarks by Mr. Bill Bauer in 1946 and there re-collected by the writer in 1947. It is represented by the following collection: *Steyermark 64262*, shallow draw in upland pine-oak-hickory woods on west side of highway 80, T 27 N, R 5 W, sect. 34, 2 mi. south of Birch Tree, Shannon Co., May 3, 1947. It is to be noted that both Missouri collections are located in shallow draws of upland woods where the soil is acid. In the Shannon County station it is associated with such acid-soil plants as *Tradescantia longipes*, *Pinus echinata*, and *Nyssa sylvatica* var. *caroliniana*.

*POGONIA OPHIOGLOSSOIDES* (L.) Ker. This was first spotted in July, 1948, by Mr. Bill Bauer in Reynolds County, southeastern Ozark region. This remarkable find, made along a well-traveled highway, was taken, with *Alnus serrulata* var. *vulgaris* and *Salix caroliniana*, in a swampy meadow, bordering a spring-branch tributary to Middle Fork of Black River, along highway 21, T 32 N, R 1 E, sect. 15, 1.8 mi. southwest of Middle Fork bridge, about 3 mi. northeast of Centerville, July 4, 1948.

This adds another of the more northern-ranging species to the list of plants inhabiting the swampy meadows of the southeastern part of the Ozarks. Others, such as *Liparis Loeselii*, *Menyanthes trifoliata* var. *minor*, *Pedicularis lanceolata*, and *Aster puniceus* var. *lucidulus* have already been noted by the writer previously.

*HEUCHERA PUBERULA* Mack. & Bush, forma **glabrata**, f. nov., a typo differt foliis subtus pallide viridibus et glabratis; petiolis et scapis glabratis vel parce pilosulis.—North-facing base of limestone bluffs, at Jam Up Bluff along Jack's Fork of Current River, T 27 N, R 6 W, sect. 5, 4 mi. north of Teresita, 6 mi. northwest of Monteer, Shannon Co., Missouri, October 2, 1948, *Julian A. Steyermark 66615*, TYPE, in Herb. Chi. Nat. Hist. Mus.

Typical *H. puberula* has the lower surface of the leaves and the petioles and scapes densely pubescent; moreover, the lower leaf surface is usually of a dull lavender color. The newly described form was growing near typical *H. puberula*.

*DECODON VERTICILLATUS* (L.) Ell. Another discovery made in an upland sink-hole pond, and not previously recorded for Missouri, is the following collection: *Steyermark 64404*, Bowles Pond, in upland tributary to Bowles Hol, tributary to Harrison Valley, T 31 N, R 1 E, sect. 23, 2½ mi. northwest of Redford, Reynolds Co., May 30, 1947.

Isolated in a densely forested part of the southeastern Ozark area, this sink-hole pond was inhabited by *Carex decomposita*, *Glyceria acutiflora*, *Isoetes Engelmanni*, *Dulichium arundinaceum*, *Hottonia inflata*, and several other characteristic species.

*JUSSIAEA LEPTOCARPA* Nutt., var. *GENUINA*. In his "A Revision of the New World Species of 'Jussiaea'", Munz cites a collection of *J. leptocarpa* var. *genuina* presumably made in Missouri, "in civitate Missouri, Frank in 1837" (Darwiniana 4, no. 2-3. p. 256. 1942). Such an indefinite locality threw doubt as to the actual occurrence of the plant in Missouri. But, late in October, while botanizing along mudflats of the Mississippi River in extreme southeastern Missouri, opposite the Tennessee line, the writer chanced upon isolated plants, which upon subsequent study prove to belong to this species. Thus, after 101 years, it may definitely be added to the flora of the state. A species known in the United States previously from Georgia, Florida, Alabama, Mississippi, Arkansas, and Texas, it ranges



southward in tropical regions from Mexico and the West Indies through Central America to Argentina and Peru in South America. The new Missouri collection, the first definite one to be recorded, is *Steysmark 67032*, mudflat along Mississippi River, Island no. 17, T 17 N, R 14 E, sect. 36 and 1, 3-4 mi. southeast of Caruthersville, Pemiscot Co., October 23, 1948.

*LINARIA MINOR* (L.) Desf. First found, new to the state, by Mr. Bill Bauer along railroad tracks in 1946 in Pike and Audrain counties. Additional collections are *Steysmark 64575*, along railroad along highway 5, between Lemons and Unionville, Putnam Co., June 21, 1947; ballast-land at South Liberty, Clay Co., June 26, 1947, *Harold E. Hurst 39* (Herb. Wm. Jewell College); same locality, June 25, 1947, *Cyril Lee Broussard* (Herb. Wm. Jewell College).

*RUELLIA PEDUNCULATA* Torr., forma **Baueri**, f. nov., a typo differt corolla alba.—In colony, Koester, St. Francois Co., Missouri, June 20, 1948, *Bill Bauer*, TYPE, in Herb. Chi. Nat. Hist. Mus.

This white-flowered form is named in honor of Mr. Bauer of Webster Groves, Missouri. During the past several years he has contributed considerably to the botanical exploration of the state.

*OLDENLANDIA BOSCHII* (DC.) Chapm. Previously known from Virginia to Florida, west to Tennessee, Arkansas, and Texas, it is now recorded from the southeastern lowlands of Missouri: *Steysmark 66958*, exsiccated depression, T 22 N, R 4 E, sect. 36, 4 mi. south of Naylor, Ripley Co., October 20, 1948.

*VALERIANA PAUCIFLORA* Michx. Mr. Bill Bauer collected a specimen of this species in 1946. The specimen, blooming in his wild flower garden, was claimed by him to come from Big Creek, Lincoln County, Missouri. Repeated trips made to re-locate the species at this station have failed, thus far. The collection is: *Bauer 11279*, alluvial woods along Big Creek, T 48 N, R 1 W, sect. 25, 6½ mi. south of Troy, Lincoln Co., April 21, 1946.

Asa Gray, in Syn. Fl. N. Am. 1<sup>2</sup>: 44. 1884, cites this species from Missouri. Tracy included it, apparently on the basis of Dr. Gray's reference, in his "Catalogue of the Phaenogamous and Vascular Cryptogamous Plants of Missouri", p. 39, 1886. As far as known, no past Missouri specimens are extant, and the present Bauer collection has yet to be verified.



*ASTER EXILIS* Ell. This species, which ranges through the American tropics, may now be added to the flora of Missouri on the basis of the following recent collections: *Steyermark 67051*, open places along shallow ditch along road E, 1½ mi. east of Cooter, sect. 8, Pemiscot Co., October 23, 1948; *Steyermark 67075*, open places near house bordering field, T 16 N, R 18 E, sect. 15, 3 mi. west of Hermandale, Dunklin Co., October 23, 1948.

*ASTER ANOMALUS* Engelm., forma **albidus**, f. nov., a typo differt ligulis albidis.—Cherty wooded slopes, Natural Bridge Hollow, T 22 N, R 26 W, sect. 17 and 18, 8–9 mi. southeast of Cassville, Barry Co., Missouri, September 24, 1947, *Julian A. Steyermark 65135*, TYPE, in Herb. Chi. Nat. Hist. Mus.

This white-rayed form was growing with plants showing the usual lavender color.

*ASTER PILOSUS* Willd., forma **PULCHELLUS** Benke. The following collection, *Steyermark 67052*, openings along ditch along road E, 1¼ mi. east of Cooter, Pemiscot Co., October 23, 1948, has lavender rays and conspicuously pubescent stems and leaves. Benke's collection, based on an Indiana plant with rose-red rays and sparsely hirsutulous stems and leaves (*RHODORA* 34: 11. 1932), is somewhat different from the Missouri collection in the color of the ray-flowers and in the lesser amount of pubescence. Inasmuch as variation in the degree of pubescence and intensity of lavender color might be expected within a given form, I am referring the Missouri collection to the form described by Benke.

#### CHICAGO NATURAL HISTORY MUSEUM

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*CYPERUS BREVIFOLIUS* IN FAIRFIELD COUNTY, CONNECTICUT.—On May 4, 1948, the writer discovered a large and flourishing colony of a strange sedge, in the Fairchild Garden section of the National Audubon Society, of Greenwich, Connecticut. This sedge has been identified as *Cyperus* (*Kyllinga*) *brevifolius* (Rottb.) Hassk., not hitherto known from north of the Philadelphia area. It grows in an open, weedy area, in company with such plants as *Solidago patula*, *Mimulus ringens*, *Polygonum sagittatum* and *Leersia oryzoides*. The soil is extremely wet in

spring, and is kept moist throughout the summer by a heavy, clay sub-soil. The sedge spreads chiefly by its long, creeping rootstocks, which produce new shoots at intervals of 1 to 2 centimeters. It is particularly prevalent, to the exclusion of all other growth, in a foot-path, about 3 feet wide, which is periodically mowed.

The Fairchild Garden, 125 acres in extent, was acquired in 1935 by the National Audubon Society. Prior to this time, it was maintained by Benjamin Fairchild, over a period of 50 years, as a private wild-flower sanctuary. During this long period, he introduced flowering plants and shrubs from Georgia to Maine, planting them in natural situations which seemed to suit their particular requirements. Maintenance consisted in keeping the requirements static by the elimination of brushy growths and other aggressive plants.

With these introduced plants have come many accidental introductions. *Galium concinnum* grows, and flowers freely, but produces little fruit. *Houstonia purpurea* is spreading over a large area. *Euphorbia corollata* is well established. *Carex trichocarpa* is known to have come in with *Lythrum Salicaria* from the Hudson River Valley, and now covers several acres of swampy land. This historical background probably explains the occurrence of *Cyperus brevifolius*.

The writer is indebted to Mr. C. A. Weatherby, of the Gray Herbarium, for the identification of, and information about this species.

Specimens have been deposited in the Gray Herbarium, the Herbarium of the Connecticut Botanical Society, at Yale University and the Herbarium of the Audubon Nature Center, at Greenwich, Conn.—LEONARD J. BRADLEY, Audubon Nature Center.

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PHYSOSTEGIA **Correllii** (Lundell), comb. nov. *Dracocephalum Correllii* Lundell, Wrightia **1**: 165. 1947.—The author of the new species first assigned it to the genus *Physostegia* in manuscript, but substituted *Dracocephalum* in deference to the opinion of Elizabeth McClintock, who has recently annotated numerous herbarium specimens under the latter genus. This accords with the treatment in Small's *Manual of the Southeastern Flora* (1933),



which in turn followed the unfortunate proposal by adherents of the American Code to make the first species listed by Linnaeus the type for its genus. Remnants of this same proposal crept into the proposed list of type species by Hitchcock and Green, published as a supplement (not an integral part) of the International Rules. There *Dracocephalum virginianum*, the first of the species listed by Linnaeus, is given as "species lectotypica." Happily this supplement is in no way binding, and is a list of suggestions only. Many of the suggestions show lack of knowledge of the genera for which types are proposed; some are quite unacceptable. For example, *Aster Amellus* is offered as the type of its genus. This Eurasian species (known in the United States in several horticultural forms) was not considered one of the *Asteres Veri*, subgenus *Euaster*, or equivalent group by any of the leading students of the genus—Nees, De Candolle, Gray, Benth (in Benth and Hooker, largely following Gray), Hoffmann (in Engler and Prantl, largely following Benth and Gray); and the circumscription of subgenus *Euaster* by these authorities has been unanimously followed by other authors dealing only with American species—Nuttall, Burgess, Small, Rydberg.

To make *Dracocephalum virginianum* the type of its genus would likewise mean abandonment of the unanimous usage of Benth, Gray, Chapman, Small (prior to 1933), Britton and Brown, Robinson and Fernald, L. H. Bailey, and more recently of Fassett, Fernald, Deam, and G. N. Jones, as well as the equally unanimous usage of seedsmen and nurserymen both in the United States and abroad. I can see no justification for the replacement of *Physostegia* Benth. by *Dracocephalum* L.<sup>1</sup>

*Physostegia Correllii* is a perennial producing rhizomes, in the manner of the cultivated plants assigned to *P. virginiana* (L.) Benth. or *P. speciosa* Sweet. Most of the species native to Texas

<sup>1</sup> This case was clearly presented (along with many others in which lack of understanding of the plants was too evident in the typifications by Hitchcock and Green) by Rehder and me when we were members of the Special Committee on the Nomenclature of the Phanerogamia and Pteridophyta appointed at Cambridge in 1930. The fact that the British Chairman of the Committee refused to accept our careful analyses was indicative of an attitude which was not wholly constructive. Fortunately, I am informed, the proper typification of *Dracocephalum* and numerous other Linnaean genera, has been again proposed to the present Commission on Nomenclature, as implied in Weatherby's footnote 50a in the unofficial edition of the International Rules in Brittonia, vi. 115 (1947).—M. L. F.

are annuals—*P. Digitalis* Small, *P. intermedia* (Nutt.) Gray (authorship incorrectly given in *Index Kewensis* as “Engelm. & Gray”), and *P. angustifolia* Fernald. Occasional specimens show slight development of a rhizome-like extension of the stem, but this I suspect is the result of burial under mud in spring. In central and eastern Texas, to which the genus is largely restricted, “gully-washers” are the rule at that season.—LLOYD H. SHINNERS, Southern Methodist University, Dallas.

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## THE RANGE OF KIAERIA STARKEI IN QUEBEC

JAMES KUCYNIAK

THE long-awaited appearance of Professor Wm. C. STEERE's important contribution to arctic and circumboreal botany, [*Musci*, Nat. Mus. of Can. Bull. No. 97: 370–490. 1947] affords the author the opportunity to re-examine the distribution of *Kiaeria Starkei* (Web. & Mohr) Hagen in Quebec.

In his paper, Dr. STEERE lists *K. Starkei* as a circumboreal species which in North America extends southwards to the northernmost tier of United States. The moss has so far proven to be of infrequent occurrence. Material only from the southernmost portion of the area which Dr. N. POLUNIN [*Botany of the Canadian Eastern Arctic. Part I.* Nat. Mus. of Can. Bull. No. 92: 1. 1940] defined as the Canadian Eastern Arctic was examined, viz., two collections made by POLUNIN: Wolstenholme (Northernmost Quebec) and Burwell (Northern Labrador).

An interpretation of the plant's distribution based upon the localities given by Dr. STEERE, contrasted with the range which Abbé Ernest LEPAGE attributes to it in Quebec, creates what appears to be still another problem in plant distribution. Listing the Quebec records of *K. Starkei* under *Arctoa Starkei* (Web. & Mohr) Grout, Abbé LEPAGE [*Les lichens, les mousses et les hépatiques du Québec . . .* Le Nat. Can. 72: 315. 1945] sets aside as doubtful two early reports: the Mt. Albert (Gaspé County) collection made by John MACOUN and that from Manicouagan River, Summit Lake (Saguenay County) by A. P. Low in 1895. However, he considers valid three collections reported by F. MARIE-ANSELME from the following localities: Waterloo (Shefford



County), Pont Rouge (Portneuf County) and La Malbaie (Charlevoix County).

Through the kindness of Mr. William K. W. BALDWIN of the National Museum, Ottawa, the author has had on loan the Quebec specimens listed by Professor John MACOUN [Cat. of Can. Pl. Part VI: 23. 1892 and Part VII: 192. 1902] under *Dicranum Starkei* and has been able to check the determinations. MACOUN's collection from Mt. Albert, bearing an abundance of sporophytes, remains to the best of the author's knowledge as named. The Low specimen from Summit Lake, however, has the costa composed of heterogenous cells and consequently does not come under *Kiaeria Starkei*. Dr. STEERE, who has re-examined the material, informs the author that it is *Dicranum fuscescens* Turn.

The author has examined the four specimens labelled *Dicranum Starkei* in the MARIE-ANSELME herbarium with the result that not one of the four specimens determined as such belongs here.

Specimen No. 1947 from Waterloo, collected on October 30, 1937, is *Dicranum scoparium* Hedw. There are several strands of *Heterophyllum Haldanianum* (Grev.) Kindb. and *Drepanocladus uncinatus* (Hedw.) Warnst. var. *typicus* Wynne mixed in with it.

The Pont Rouge material, No. 2739, after examination proved to be *Timmia austriaca* Hedw. with shreds of *Myurella Careyana* Sull. running through macroscopically Bartramia-like material.

The collection from La Malbaie in the lower St. Lawrence river region, No. 3667, is *Blindia acuta* (Hedw.) Bry. Eur.

A fourth collection found in the herbarium, though not recorded in the Lepage list, the label of which reads "Lac Bowker, comté de Shefford: à terre; 21 août 1937; F. Marie-Anselme, 1684", more appropriately belongs to *Dicranum Bonjeani* DeNot.

In concluding, it may be assumed that in Quebec only two stations for *Kiaeria Starkei* are known to date: Mt. Albert (Gaspé County) and Wolstenholme (Northernmost Quebec).

The author is indebted to Dr. STEERE, Mr. BALDWIN and F. FABIVS, s. c., through whose generous assistance he has been able to throw some light on another problem in plant distribution.

MONTREAL BOTANICAL GARDEN.

GRASSES OF NORTH CAROLINA (A FRIENDLY CRITIQUE).—Under the title, *THE GRASSES OF NORTH CAROLINA*<sup>1</sup>, a very attractive volume has been received for review, "with the request that in notices or reviews attention be called to the price". How could one help noting \$7.50 for a book of only 276 pages (including a few blanks), the price so in contrast with the more modest charges for much larger and more comprehensive volumes covering a vastly greater area? Those who can raise the money will have a well printed and attractively illustrated book, with reproductions from photographs of overfed (on grass) cattle, "balds", savannas, some of the more conspicuous grasses and beautifully drawn small line-illustrations of many of the species and, perhaps of most interest to students of different or adjacent areas, 298 small maps showing the counties in which most of the accepted species are known, at least to the author. There are excellent keys, including one based on vegetative characters, this with drawings of leaf-bases, sheaths, ligules, etc. of a few species, but, rather strikingly, not of rhizomes and bases.

In recognition of species the evaluations in Hitchcock's *Manual of the Grasses of the United States* (1040 pp., 1696 wonderfully fine figs. for \$1.75) are largely accepted but a few not known to Hitchcock, including one described by the reviewer, are admitted; but many later studies by those who have demonstrated that the actual types, when examined, lead to different interpretations, are passed by or in some cases dismissed as not acceptable, although with an apology like: "Judging from a photograph of the type [the photograph published by the present reviewer], there seems to be some justification for this opinion". What more than a revealing photograph of the type is needed? If the actual types and the original descriptions agreeing with them are discarded as of no account, what basis is there which can lead to stability?

But so faithfully does the author accept the Washington verdict, right or demonstrated wrong, that he "has drawn freely from Professor Hitchcock's *Manual*". The freedom in drawing from the work of another is exemplified in some of the keys, for instance under *Paspalum*, where word-for-word passages are taken over, without even the simple changes which the copy-righting and very high pricing of the new book would suggest as desirable. Such passages as these could readily have been so stated, after full understanding of the plants, as to avoid essential imitation:

"Blades conspicuously ciliate, otherwise nearly glabrous.

Blades relatively short, rounded at base and recurved-ascending; foliage aggregate toward the base, the upper culm relatively naked; spikelets glabrous, mostly 1.5–1.6 mm. long."—*Hitchcock*, p. 577.

"Blades conspicuously ciliate, otherwise glabrous or nearly so, relatively short; rounded at base; foliage aggregate toward the base, the upper culm slender and relatively naked; spikelets 1.5 to 1.6 mm. long, glabrous."—*Blomquist*, p. 125.

There are available synonyms for "conspicuously", "nearly", "relatively", "aggregate", etc. which could have been used; for, when a volume (*Hitchcock's Manual*), prepared at great expense with federal funds collected from the country's taxpayers and distributed gratis or at a low price to all who need it, has leading phrases taken over directly into a copyrighted and forbiddingly priced and much smaller book, some questions must arise at least as to complete originality of the work and its copyrighting.

A "notice" might stop with these three paragraphs and then add the "release" sent out by the publishers with the assertion that the new book "includes the majority of the grasses of the eastern United States . . . 360 species and varieties"; but immediately one's curiosity is aroused, for the

<sup>1</sup> *The Grasses of North Carolina* by H. L. BLOMQUIST, Professor of Botany, Duke University. vi + 276 pages, 249 figs., 298 small maps. Durham, N. C. Duke University Press, 1948. \$7.50



reviewer has recently sent to the printer a large volume covering the flora of temperate eastern North America north of North Carolina, Tennessee and Arkansas and south of the Labrador Peninsula and the north shore of Lake Superior, with about 650 grasses recognized in the area south of Canada. In view of the fact that in the southeastern United States, south of Virginia and Kentucky, Small admitted 180 additional species, we get a total in the "eastern United States" of about 830 recognized grasses, of which 360 is scarcely a majority. It, therefore, seems important to learn why a book produced through financial assistance both in assembling the matter and in its publication (acknowledged on p. vi) is put on the market at a price which approaches that of Small's privately issued *Manual*, with 1554 pages of smaller type and with more than 1500 analytical drawings of generic details. Immediately one checks to determine the completeness of the new book and its recognition of the records of earlier and cautious workers on the flora of North Carolina; and, although the author has himself been assiduous in collecting and studying the grasses of portions of his state, it is disappointing to find in the new book no obvious mention of the earlier great students of the North Carolina flora: for instance, such a distinguished former leader in botanical research in the state as HARDY BRYAN CROOM (1797-1837) who, while living in Craven County, prepared his detailed and posthumously published *Catalogue of Plants, native or naturalized, in the Vicinity of New Bern, North Carolina* (1837). Croom, a Corresponding Member of the Academy of Sciences of Philadelphia, and of the New York Lyceum of Natural History, sent or took his more critical plants to Torrey and they are presumably preserved in the Torrey Herbarium; and Torrey perpetuated his memory by the genus *Croomia*, while the famous genus *Torreya* was based by Arnott on material discovered by Croom in Florida. The North Carolina records of such a careful botanist of "charming personality and scholarly attainments"<sup>2</sup> should not be neglected. MOSES ASHLEY CURTIS (1808-1872), perhaps the most distinguished botanist of North Carolina, member of the American Philosophical Society and honorary member of many other learned societies and academies, published a *Catalogue of the Plants growing spontaneously around Wilmington, North Carolina* (1835), a *Catalogue of the Indigenous and naturalized Plants of the State* (1867) and many papers recording new discoveries. It is too bad to have neglected his careful records. THOMAS FANNING WOOD (1841-1892) LL.D. hon., Univ. N. C., and MICHAEL GERALD MCCARTHY (1858-1915), who for 20 years was "state botanist" and who, in checking identities, used to visit the Gray Herbarium and other large northern collections, cooperated in 1887 in publishing on the flora of Dr. Wood's home-town, Wilmington. Many of their records would have made important additions to the new book, for in all or nearly all cases they were of unmistakable species.

Croom's enumeration would have supplied records for Craven County not indicated on the maps: *Melica mutica*, *Sporobolus clandestinus*, *Zizania aquatica*, *Amphicarpum Purshii*, etc. Curtis's Wilmington list would have supplied dots for a county sixty to one hundred miles from the nearest one indicated for *Festuca obtusa*, *Anthoxanthum odoratum*, *Hydrochloa caroliniensis*, etc.; while the Wood and McCarthy enumeration for Wilmington would have supplied extensions of indicated range for 24 species and it recorded 3 species of grasses

<sup>2</sup> As showing the difference between the usages of the "scholarly" Croom and the writing of English names too often found in the work of many who lack feeling for careful grammatical construction, witness the following. In Croom's *Catalogue*: *Umbrella-tree*, *Venus' Fly-trap*, *Red maple*, *Touch-me-not*, *Wood-sorrel*, *Rattle-box*, *Wild Indigo*, *Wild oats*, *Broom-grass*, *Rice-grass*, etc., with evident feeling for the careful use of hyphens to indicate grammatical construction. In *Grasses of North Carolina*: FOWL MANNAGRASS, ORCHARD GRASS, CRESTED DOGTAIL GRASS, WILDRICE, OATGRASS, GOOSE-GRASS, SWEET VERNALGRASS, and TOOTHACHE OR ORANGE GRASS. One would prefer to chew ORANGE-GRASS (because of the fragrance of the bruised bases) instead of TOOTHACHE.

not in the new book: *Agrostis verticillata*, *Aristida spiciformis* (cited by Hitchcock from South Carolina) and *Cenchrus myosuroides*. Nuttall's *Paspalum racemosum*, reduced by Mrs. Chase to *P. bifidum*, was from "Florida to North Carolina", although she stated the northern limit as in South Carolina. In Curtis's *Catalogue* of 1867 this unique and unmistakable species was indicated (p. 65) for the breadth of the state: "Coast to Cherokee". Since the species is found over the line, in dry sandy woods of Sussex County, Virginia, Curtis's record can hardly be assumed to have been wholly erroneous, at least without further evidence; and his *P. praecox* from "Low. Dist. to Wake." gives an extension of local range, while his *P. fluitans* (one of the cases in which the taxonomic facts are apparently distasteful to the author of the book) from "Lincoln Co." gives something more tangible than "is to be expected in North Carolina". If all other species "to be expected in North Carolina" had been included as numbered species the score would more nearly approach the "majority" above noted.

Other publications on the flora of North Carolina, if taken into account, would add to the records. Thus, Kearney's *Report on a Botanical Survey of the Dismal Swamp Region* records *Zizania aquatica* from near Edenton, this species indicated by Blomquist from only the two southernmost coastal counties, 150 miles away, but recently collected near Edenton by Godfrey, no. 5337 (in Gray Herb.). Much later, in Peattie's *Flora of the Tryon Region* (1928-1931), more than 40 grasses would have supplied dots (now missing) for Polk County in the Blue Ridge and one species not noted in the new book. Incidentally, in Am. Journ. Sci. ser. 2, vii. 410 (1849) Curtis cited *Polypogon monspeliensis* from "coast of N. Car. as far north at least as Ocracoke Inlet!" That was a sufficient statement to justify a dot (now missing) on map 94 at the outer and southernmost corner of Hyde County. Very much earlier, as far back as 1812, important records from North Carolina were made. Under *Leersia lenticularis*, Professor Blomquist, recording the only North Carolina station known to him, in Carteret County, stated that the voucher has not been located. But nearly a century and a half ago Frederick Pursh recorded it from northeastern North Carolina, a fact familiar to Curtis, who cited Pursh's locality. In his Fl. Am. Sept. i. 62 (1814) Pursh wrote: "Illinois and Virginia . . . This singular and elegant grass I found on the islands of Roanoke river in North Carolina, and observed it catching flies in the same manner as *Dionaea muscipula*: the valves of the corolla are nearly of the same structure as the leaves of that plant. I communicated specimens with this particular circumstance to Dr. B. S. Barton of Philadelphia, who has made mention of it in a paper on the irritability of plants". Barton's note was in his paper, *Desultory Observations concerning certain vegetable Muscipae* in Tilloch's Phil. Mag. xxxix. 108 (1812): "The grass to which I allude is the *Leersia lenticularis* . . . The plant is a native of marshy grounds of the Illinois country, of Virginia, North Carolina &c". Here, of course, was the origin of the name "Catch-fly grass". Barton and Pursh knew the plant also from Virginia, although Hitchcock did not recognize it in the East from north of South Carolina; but it is very abundant on many bottomlands of southeastern Virginia, thence northward into Maryland! The bottomlands of the Meherrin, Nottoway and Blackwater systems are often filled by it, and the bottomlands of these rivers, passing into northeastern North Carolina, must surely have it.

This note on the old records of *Leersia lenticularis* in northeastern North Carolina inevitably leads to the observation that about half the maps in the new work have no indication of species as found in the northeastern or even the eastern (Coastal Plain) section of the state; and that, except for the Wilmington region, most recent North Carolina botanists have largely clung to the Piedmont and the Blue Ridge. So very many of the plants, unrecognized as growing in northeastern North Carolina, occur just over the line in southeastern Virginia that it is most difficult to imagine them sharply discriminating



against adjacent North Carolina: *Poa paradoxa*, *P. Chapmanniana*, *P. cuspidata*, *Eragrostis hypnoides*, *Uniola latifolia*, *Melica mutica*, *Agrostis Elliottiana*, *Cinna arundinacea*, *Alopecurus carolinianus*, *Aristida oligantha*, *A. lanosa*, *Leersia hexandra*, *Paspalum lentiferum*, *Panicum yadkinense*, *P. caeruleascens*, *P. Wrightianum*, *P. hians*, *Cenchrus incertus*, *Sorghastrum Elliottii*, etc., etc. In fact, one such species, as above noted, was secured by Kearney and by Godfrey. Some others, slightly closing gaps, these noted from labels in the Gray Herbarium, are the following: *Poa cuspidata* from west of Fairfield, Tyrrell Co., Godfrey, no. 3917; *Sphenopholis filiformis* from Raleigh, Wake Co., Godfrey, no. 3559, and from Delgado, New Hanover Co., April 21, 1923, J. R. Churchill; *Sporobolus clandestinus* from Wyanoke, Gates Co., Fernald & Long, no. 11,524; and *Ctenium aromaticum* from Pinehurst, Moore Co., July 1897, Otto Katzenstein, and from Pine Bluff Wiegand & Manning, no. 337, also from 7 miles southwest of Wilmington, in Brunswick Co., Godfrey, no. 4134.

Close to the Carolina line (from a few rods up to 10 miles away) and on river-systems flowing through eastern North Carolina there are many species not yet recorded from the latter state. These suggest some worth-while botanizing: *Bromus nottowayanus* Fern. (characteristic of bottomland of the river which, uniting with the Blackwater, forms the Chowan in North Carolina); *Glyceria arkansana* Fern., positively dominant on bottomland of the Meherrin River system east of Emporia, Virginia, the Meherrin winding back-and-forth along the state line in Northampton County, North Carolina, and finally crossing Hertford County; *Eragrostis multicaulis* Steud. (*E. peregrina* Wieg.), a characteristic weed of roadsides, paths and railroads, which has presumably been carried by vehicles south of Franklin, Virginia; *Triodia Chapmani* (Small) Bush, a beautiful species of pineland from Southampton to Princess Anne County, Virginia, sometimes, as at Factory Hill in Nansemond, only a stone's throw from Gates County, North Carolina<sup>3</sup>; or *Muhlenbergia brachyphylla* Bush, characteristic of flat pinelands of southeastern Virginia and, like *M. glabriflora*, a plant primarily of the Mississippi Basin but with isolated stations on the Coastal Plain or in the Piedmont. Unfortunately this eastern isolation of *M. glabriflora* got wholly obscured in the new book on North Carolina grasses, for, although as yet known east of the Mississippi drainage at only one station in Maryland, one in Brunswick County, Virginia, and another in Durham County, North Carolina, the broad range is here given as "Newfoundland to British Columbia, south to North Carolina, Kentucky, Oklahoma, and Arizona". Hitchcock, in his *Manual*, had more accurately said "Low woods, Maryland, Indiana, Illinois, Missouri, and Texas", although his map 773 had no dot for Maryland. The evident source of the newly stated range (with North Carolina substituted for Maryland) is Hitchcock's statement of range for what proves to be a bi- or tripartite species, *M. racemosa* sensu Hitchcock: "Newfoundland to British Columbia, south to Maryland, Kentucky, Oklahoma, and Arizona".

The upshot seems to be, that there is very much close work remaining to be done, especially on the Coastal Plain of northeastern North Carolina, before anything truly approaching a complete list of plants of the state and their distribution can be made. The discriminating worker, exploring all types of habitat from the lower Roanoke to the coast from False Cape southward, should quickly add to the known flora of the state many of the 65 grasses of adjacent Virginia not recorded from North Carolina, more than two score of sedges similarly known, and many scores of showier plants. These, if he follows the traditional practice of scientists for many decades, he will record in appropriate journals in his field, as a report of progress. The results would then reach those really prepared to use them, for most scientific workers are not so endowed as to pay an unusually high price for obviously incomplete work.

<sup>3</sup> At the last moment *Elymus riparius*, found near the state-line in Virginia, is removed from these few examples because Hitchcock definitely cites and maps it from North Carolina.

The reviewer makes the above criticisms and suggestions in all friendliness for an active and coöperative fellow-worker and with full realization of the errors which too often make their way into his own work. He is not alone, he finds, in regretting that a handsome and expensive book should have been published without more thorough examination of the flora of a mostly neglected portion of the state and without full appreciation of the work done by earlier students of the North Carolina flora. The painstaking examples of such distinguished masters as Croom, M. A. Curtis, Wood and McCarthy, remote from large collections for comparison but achieving outstanding results, should inspire us all.—M. L. F.

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A NEW MOSS FROM NEBRASKA.—*PTERIGONEURUM SUBSESSILE* (Brid.) Jur., var. **Kieneri**, var. nov. A forma typica differt: lamellis foliorum humilibus; capsula unacum pedicello decidua, ut in *Phascaceis*, tandem ad sporulas emittendas disrupta, operculo basi minima non deciduo (calyptra cucullata?).—NEBRASKA: *Kiener* 10627 (in part).

The plants in this collection are of two forms. One is nearly typical. The other, var. *Kieneri*, possesses an altogether different type of sporophyte, in having a capsule with a non-dehiscent lid; and the seta, capsule and lid often fall as one, the seta having broken away near its base. The spores are liberated through rupture of the capsule-wall. The calyptra seems to be cucullate.

This condition, of a species or group of closely related species having in some instances a persistent and in others a deciduous operculum, is not unusual, for past authors have made special note of it, especially with *Hymenostomum rostellatum* (Brid.) Schimp. Some authors place the forms in separate genera, while others lump them into one species.

The novelty described above was found in a set of Nebraska mosses sent to the writer for determination by Dr. Walter Kiener.—HERBERT HABEEB, Grand Falls, New Brunswick.

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